

AMENDMENTS TO THE CLAIMS:

Claim 1 (Currently Amended) An electrochemical cell comprising:

an aluminum anode; ~~and~~

an electrolyte solution positioned adjacent to the aluminum anode;

a first fiberglass cloth positioned adjacent to the electrolyte solution and distal to the aluminum anode;

~~a solid alkali metal peroxide cathode the cathode separated from the aluminum anode by an electrically insulating barrier~~ comprising a woven metal electrode and a solid alkali peroxide, the woven metal electrode positioned adjacent to the first fiberglass cloth and separated from the solid alkali peroxide by a second fiberglass cloth, the aluminum anode and the cathode to participate in an electrochemical reaction to release energy from the cell upon the introduction of an aqueous activator.

Claim 2 (Canceled)

Claim 3 (Currently Amended) The electrochemical cell of claim 1, wherein the solid alkali ~~metal~~ peroxide ~~cathode~~ is sodium peroxide.

Claim 4 (Currently Amended) The electrochemical cell of claim 1, ~~further comprising a metal electrode and a fiberglass cloth barrier separating the metal electrode from the alkali metal peroxide such that upon~~ wherein the introduction of the aqueous activator results in dissolution of the solid alkali ~~metal~~ peroxide in the aqueous activator, such that the dissolved alkali ~~metal~~ peroxide passes through the second fiberglass cloth and through the woven metal electrode.

Claim 5 (Currently Amended) The electrochemical cell of claim 3, wherein the sodium peroxide ~~employed in the cathode~~ is solid granular sodium peroxide.

Claim 6 (Currently Amended) The electrochemical cell of claim 1 4, wherein the woven metal electrode is woven silver plated copper wire.

Claim 7 (Original) The electrochemical cell of claim 1, wherein the aluminum employed in the anode is at least 99.999% pure aluminum.

Claim 8 (Currently Amended) The electrochemical cell of claim 1, wherein the electrolyte solution is potassium chloride.

Claim 9 (Currently Amended) The electrochemical cell of claim 1, wherein the electrolyte solution is potassium hydroxide.

Claim 10 (Canceled)

Claim 11 (Canceled)

Claim 12 (Currently Amended) The electrochemical cell of claim 1, wherein the aqueous activator is water.

Claim 13 (Currently Amended) The electrochemical cell of claim 1, wherein the aqueous activator is an aqueous hydroxide solution.

Claim 14 (Currently Amended) The electrochemical cell of claim 1, wherein the aqueous activator is an aqueous salt solution.

Claim 15 (Canceled)

Claim 16 (Currently Amended) The electrochemical cell of claim 1, wherein an electrode bulk surface area of the metal electrode of the cathode and an electrode bulk surface area of the anode are substantially stoichiometrically matched to satisfy diffusion of ions and to minimize side reactions forming hydrogen and oxygen gases.

Claim 17 (Currently Amended) The electrochemical cell of claim 16, wherein the ratio of the electrode bulk surface area of the anode to the electrode bulk surface area of the metal electrode of the cathode is between 23% and 40%.

Claim 18 (Withdrawn) An electrochemical cell comprising an anode having an electrode bulk surface area and a cathode having an electrode bulk surface area, wherein the electrode bulk

surface area of the anode and the electrode bulk surface area of the cathode are substantially stoichiometrically matched to satisfy diffusion of ions and to minimize side reactions.

Claim 19 (Withdrawn) The electrochemical cell of claim 18, wherein the ratio of the electrode bulk surface area of the anode to the electrode bulk surface area of the cathode is between 23% and 40%.

Claim 20 (Withdrawn) The electrochemical cell of claim 18, wherein the anode is comprised of aluminum.

Claim 21 (Withdrawn) The electrochemical cell of claim 18, wherein the cathode is comprised of air.

Claim 22 (Withdrawn) The electrochemical cell of claim 18, wherein the cathode is comprised of hydrogen peroxide.

Claim 23 (Withdrawn) The electrochemical cell of claim 18, wherein the cathode is comprised of sodium peroxide.

Claim 24 (Withdrawn) An electrochemical cell comprising an aluminum anode spaced from a sodium peroxide cathode by an electrically insulating barrier, the anode having an electrode bulk surface area and a cathode having an electrode bulk surface area, wherein the electrode bulk surface area of the anode and the electrode bulk surface area of the cathode are substantially stoichiometrically matched to satisfy diffusion of ions and to minimize side reactions.

Claim 25 (Withdrawn) The electrochemical cell of claim 24, further comprising an electrolyte solution, the anode and the cathode positioned within the electrolyte solution.

Claim 26 (Withdrawn) The electrochemical cell of claim 24, wherein the sodium peroxide cathode further comprises a metal electrode and sodium peroxide.

Claim 27 (Withdrawn) The electrochemical cell of claim 26, wherein the sodium peroxide is enclosed in fiberglass cloth and is positioned such that upon dissolution, the sodium peroxide passes through the metal electrode.

Claim 28 (Withdrawn) The electrochemical cell of claim 26, wherein the sodium peroxide employed in the cathode is solid granular sodium peroxide.

Claim 29 (Withdrawn) The electrochemical cell of claim 26, wherein the metal electrode employed in the cathode is woven silver plated copper wire.

Claim 30 (Withdrawn) The electrochemical cell of claim 24, wherein the aluminum employed in the anode is at least 99.999% pure aluminum.

Claim 31 (Withdrawn) The electrochemical cell of claim 25, wherein the electrolyte solution is potassium chloride.

Claim 32 (Withdrawn) The electrochemical cell of claim 25, wherein the electrolyte solution is potassium hydroxide.

Claim 33 (Withdrawn) The electrochemical cell of claim 24, wherein the electrically insulating barrier is a membrane of fiberglass cloth located between the cathode and the anode to restrict direct contact.

Claim 34 (Withdrawn) The electrochemical cell of claim 24, further comprising an activator, the activator added to contact the cathode of the cell to initiate the electrochemical reaction within the electrochemical cell.

Claim 35 (Withdrawn) The electrochemical cell of claim 34, wherein the activator is water.

Claim 36 (Withdrawn) The electrochemical cell of claim 34, wherein the activator is an aqueous hydroxide solution.

Claim 37 (Withdrawn) The electrochemical cell of claim 34, wherein the activator is an aqueous salt solution.

Claim 38 (Withdrawn) The electrochemical cell of claim 34, wherein the activator is potassium chloride.

Claim 39 (Currently Amended) The electrochemical cell of claim 16, wherein the ratio of the electrode bulk surface area of the anode to the electrode bulk surface area of the woven metal electrode of the cathode is between 23% and 40%.

Claim 40 (Original) The electrochemical cell of claim 16, wherein the chemical reaction further comprises  $2\text{Al}_{(s)} + 3\text{Na}_2\text{O}_{2(s)} + 6\text{H}_2\text{O} \rightarrow 2\text{NaAl}(\text{OH})_{4(aq)} + 4\text{NaOH}_{(aq)}$ .

Claim 41 (Canceled)

Claim 42 (Canceled)